



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/886,226 07/01/97 COLLINS

R 06577/027001

26M2/1113

DAVID L FEIGENBAUM  
FISH AND RICHARDSON  
225 FRANKLIN STREET  
SUITE 3100  
BOSTON MA 02110-2804

RECEIVED BY  
NOV 17 1997

EXAMINER

ART UNIT

PAPER NUMBER

2615

17

DATE MAILED: 11/13/97

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

RECEIVED

NOV 17 1997

NOV 17 1997

☒ This application has been examined

☒ Responsive to communication filed on 6/9/97

DAVID L. FEIGENBAUM

FISH & RICHARDSON, P.C.  
BOSTON, MA

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.       |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/>   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-34 are pending in the application.
- Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-34 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

Docketed By Practice System
Action Code: 2000
Base Date: 11/13/97
File Date: 2/13/98
Examination Date: 5/13/98
Initials: DMG
Record: 134807

Docketed By Billing Secretary
Due Date: 2/13/98
Deadline: 2/13/99
Initials: BJA

EXAMINER'S ACTION

### Part III Detailed Action

#### Disclosure

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

#### Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 1, 2, 5-13, 15, 19-21, and 34 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865.

For claim 1, a method of compressing a digital image with at least three textures to reduce the amount of storage required for holding it prior to display is provided by Gentile in at least the abstract and Fig. 2. Generating a bitmap representing boundaries separating regions comprising pixels is provided by Gentile in at least Fig. 2 and the abstract, where rasterization provides a bitmap practically by definition, so that rasterization obviously provides for a bitmap. Generating a pointer for each region, where the pointers associate regions with textures is provided by Gentile in at least Fig. 2, and in at least c. 2, lines 50-66 and in the in the first full paragraph in c. 7. Storing the bitmap and the pointers for later display is provided in at least c. 1, lines 10-15, c. 2, lines 10-20, c. 3, lines 35-55, and c. 4, lines 44-49.

For claim 2, boundaries and regions of different pixel values is provided in at least Fig. 2, where boundaries are explicitly illustrated, and boundaries are also explicitly provided in at least the paragraph bridging cols. 2-3, and pixels are provided in at least c. 1, lines 33-50, c. 4, lines 50-54, and the paragraph bridging cols. 10-11.

For claims 5 and 6, Gentile provides for pointers including a location and a single location in at least in the first full paragraph in c. 7, where the pointers point to region elements in a raster format, which is well known to have a row-column location arrangement, since a bitmap contains at least location.

For claim 7, each region comprising a single texture is provided by Gentile in at least Fig. 2.

For claim 8, boundaries comprising a first texture is also provided Gentile in at least Fig. 2.

For claim 9, generating a bitmap is known as rasterization, and is provided by Gentile in at least the paragraph bridging cols. 2 and 3, and where conversion into a second texture is illustrated in at least Fig. 2.

For claim 10, finding a location in each region which is not the second texture for generating pointers is provided by Gentile in at least the in the first full paragraph in c. 7, and in Fig. 2, where pointers are provided for several textures.

For claim 11, a bitmap that has one bit per pixel is at least obviously, if not inherently, provided by the rasterization of Gentile in at least c. 2, lines 57-67, and pixels are provided as noted above for at least claims 1 and 2.

For claims 12 and 13, encoding the bitmap with run-length-encoding is provided by Gentile in at least c. 5, lines 20-23.

For claim 15, see the rejection of at least claim 1 above.

For claim 19, see the rejection of at least claim 11.

For claims 20 and 21, see the rejection of at least claims 12 and 13.

For claim 34, see the rejection of at least claim 1, and Figs. 1 and 10 of Gentile.

2. Claims 3, 4, 14, 16-18, 22-27, and 31-33 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, as applied to claims 1, 2, 5-13, 15, 19-21, and 34 above, and further in view of Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720.

For claim 3, Gentile provides for textures in at least Fig. 2, and as noted in at least the in the first full paragraph in c. 7, but does not explicitly provide for assigning codes to these textures. However, this is conventional and well known, and is provided by Sakuragi et al. in at

least c. 4, lines 8-18, and by Baisuck et al. in at least c. 3, line 45 - c. 4, line 45, where codes are provided by at least type, model identifier, and orientation. These conventional features can be used by Gentile, since he provides for textures in an imaging system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Sakuragi et al., since they provide for different sizes and patterns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Baisuck et al., since they provide for "tremendous compression" in the paragraph bridging col. 3 and 4.

For claim 4, pointers are provided by Baisuck et al. in at least c. 2, lines 44-57, and by Sakuragi et al. in at least c. 4, lines 8-18 as noted above for claim 3.

For claim 14, see at least the above rejections of at least claims 1, 3-5, and 8-9 above. Furthermore, at least two regions are illustrated by at least Gentile in at least Fig. 2.

For claim 16, see the rejection of at least claim 3 above. Sakuragi et al. provide for a palette by using a CGROM, and is also provided by Baisuck et al. as noted above for at least claim 3, as well as at least Figs. 2, 3, and 6(a), where a plurality of registers, e.g. the shape and group model registers, provide for palette associating textures and codes.

For claim 17, see the rejection of at least claims 3-5 above.

For claim 18, see the rejection of at least claims 4 and 6.

For claim 22, see the rejection of at least claim 1, and decompressing and filling is provided by Gentile in at least the last three full paragraphs in c. 6. The recitation "referencing" or equivalently references is not explicitly provided by Gentile, but is provided by at least Baisuck et al. in at least the first two full paragraphs in c. 4.

For claim 23, see the rejection of at least claim 11.

For claims 24 and 25, see the rejection of at least claims 12 and 13, and at least c. 6, lines 38-46.

For claim 26, converting the bitmap to multiple bits per pixel is suggested by Gentile in at least the last full paragraph in c. 6, since commands are used to specify color. This is also considered as admitted prior art by the Applicant on at least page 1, lines 10-15, where a black

and white image (e.g. bitmap, which is already provided by Gentile), is subsequently colorized, thus providing for multiple bits per pixel.

For claim 27, referencing a pointer to determine a location is at least obviously, if not inherently, provided by Gentile, since he uses pointers to shapes and bit patterns in at least the in the first full paragraph in c. 7, where these bit patterns are defined by elements in a region in the raster, thus having a location. However, at least Baisuck et al. also provide for references or pointers in at least c. 2, lines 43-57, and in at least c. 4, lines 30-35, where a location are explicitly provided. Converting the regions pointed to by location to textures is provided by at least Gentile by the filling and coloring noted in the bottom full paragraph in at least c. 6, and by the shapes and bit patterns in at least the in the first full paragraph in c. 7.

For claim 31, see the rejection of at least claims 1 and 22. For overlaying the image on a background, see at least Fig. 2 of Gentile, and further note that this is also admitted prior art on page 1, lines 9-11 of the specification. Referencing the pointers is more explicitly provided by Baisuck et al. as noted above for at least claim 27.

For claim 32, see the rejection of at least claim 31. The illusion of motion is not explicitly provided by Gentile, but the repetition of referencing, filling, and overlaying is admitted prior art in the first full paragraph on page 1 of the specification, and is also conventional and well known, as evidenced by the conventional and well known video games also mentioned in the specification in the Background.

For claim 33, see the rejection of at least claims 1, 14, 22, and 31.

3. Claim 28 is rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720, as applied to claims 3, 4, 14, 16-18, 22-27, and 31-33 above, and further in view of Murata et al., 5,539,865.

For claim 28, Gentile at least obviously, if not inherently, provides for converting to color as a function of texture as indicated in at least Fig. 2 and in at least c. 5, lines 35-45. However, Murata et al. more explicitly provide for determining a function associated with texture(s) in at least col. 18, lines 35-43, and converting each pixel into a color(s) is provided in col. 18, lines 35-56. This feature of Murata et al. can be used by Gentile, since they at least suggest this as noted above. It would have been obvious to one having ordinary skill in the art at the time the

invention was made to use the system of Murata et al. for coloring as a function of texture, since they use video RAM storage and color codes, which provide for very fast processing.

4. Claims 29 and 30 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720, and Murata et al., 5,539,865, as applied to claim 28 above, and further in view of Foley et al. "Computer Graphics: Principles and Practice".

For claims 29 and 30, Murata at least obviously if not inherently provides for seed filling, since seed filling can mean starting the fill from a pixel within a boundary defined region - lines 8-10 on page 980 of Foley, where Murata provides for a boundary defined region as shown in Figs. 10 A- K and each polygon region of Murata is processed separately - col. 19, lines 54-57, col. 20, lines 5-12 and lines 58-68, with reference to Figs. 1B and 10I, 10J, and 10K, where it is seen that the filling is deterministic, where filling is commenced at the determined location defined by the functions and by scanning - col. 19, line 67 - col. 20, line 4. Since Murata does not explicitly provide for seed filling, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use one of the seed filling algorithms of Foley, since Foley provides for efficient region filling in the second paragraph under "The Basic Filling Algorithms" on page 980.

#### **Response to Amendment**

5. Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new grounds of rejection.

#### **Prior art not relied upon**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Silverbrook, EP 0475601A3 - conventional relevant graphics processing.

Mulmuley, 5,086,496 - pointers to regions for depth (i.e. a form of texture) - abstract.

### Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Johnson whose telephone number is (703) 306-3096.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

The Group Art Unit FAX number is (703) 308-5397.

TJ

Timothy M. Johnson  
Patent Examiner  
Group Art Unit 2616  
October 31, 1997

JOSEPH M. JOHNSON  
PATENT EXAMINER  
ART UNIT 266